# Warnings & Guidelines for Using Lithium–ion Battery Pack in Model Trains and and Charging your Lithium Battery Pack

Each MTO lithium battery is assembled with 22 GA silicone wire, JST locking 2 pin connectors and all connections are spot welded. Each assembled pack includes the latest version of the Protection Circuit Module or PCM. This PCM prevents Overcharging, Over discharging, Short circuit protection of the red/blk hookup wires and up to 12 month shelf life without damaging the lithium battery.

If you accidentally short circuit the red/blk wire leads, the internal PCB will turn off the lithium battery pack until the short circuit is removed. It is possible the battery pack will not work. Reconnect your charger to wake it up.

**WARNING: IF YOU CUT OFF THE JST POLARIZED CONNECTOR ATTACHED TO THE LITHIUM BATTERY YOUR WARRANTY IS VOIDED AND THERE IS A RISK OF ELECTRICAL SHORT WHICH COULD CAUSE A SPARK OR FIRE AND INJURY.**

**LITHIUM BATTERY WARNING: Do not use a Nickel based charger to charge a lithium battery. Charging a lithium battery with a non-designated charger will void your warranty and possibly cause a fire.** When charging your lithium battery you should always remain in constant observation to monitor the charging process and reaction to potential problems that may occur. Failure to do so may result in fire. Some lithium chargers on the market may have technical deficiencies that may cause it to charge your lithium battery incorrectly or at an improper rate. (Over 1 amp per hour charge) It is your responsibility to assure the charger you purchased works properly and is preset to the correct setting.

**WARNING:** Never fast charge these lithium packs, they could overheat and explode. We only recommend and sell the MTO and Cell-Con chargers. We are not responsible for any failure or damage caused by other brands of chargers. Especially variable voltage and variable current type chargers.

It will take your lithium battery between 3 cycles (Charge/Discharge) to reach its full capacity.

**Never recharge a hot or charged battery!**

**WARNING:** We do not recommend charging a MTO lithium battery over 1 amp per hour. Charging a MTO Lithium Battery over 1.5 amp hours could make the battery extremely hot to the touch, the cells could balloon causing your battery-pack to expand and/or burst into flames.

**WARNING: If at any time or for any reason your lithium battery is warm to the touch or you witness your battery starting to balloon, swell-up, smoke or get hot, Discontinue the charging process immediately and disconnect the battery from the charger to observe it in a safe place outside of your home or garage. If this occurs turn your charger off, take the battery outside and/or out of the device you're using it in, place the battery on a concrete surface and call the manufacturer.**

**WARNING:** Check your chargers listed # of cells and make sure you have selected the correct charger to match the number of cells. Battery voltage equals number cells. (3.7V =1 cell, 7.4V = 2 cells, 11.1V = 3 cell, 14.8V = 4 cells, 18.5V = 5 cells).

Never store or charge your battery-pack inside your car or in extreme temperatures, since extreme temperatures could ignite and cause a fire. Never drop your battery. If you install your lithium battery within an enclosed environment, we suggest you add air vents if needed to the structure or place a fan within the structure to help circulation.

Smart Chargers: We recommend using a MTO Smart Charger for 1-4 cell/3.7 to 14.8V packs or the Cell-Con Smart Charger for 5 cell/18.5V lithium packs. These smart chargers shuts-off when the charging cycle is complete. The charge indicator LED will aluminate RED when charging and GREEN indicating the charging process is complete when charging a lithium battery.

**WARNING:** Using a charger that doesn't shut off after the charging process, may cause the cells of your lithium battery to become hot, explode and cause a fire.

**If you need help or have any questions, please contact RCS of New England at (603) 321-1347.**